

Serial No. 09/339,430 . . . . . Page 2

CLAIM AMENDMENTS

1. (CANCELED) Apparatus for remotely controlling the position of a camera head, said apparatus comprising, in combination:

a) at least one hydraulically-actuated positioner having an output shaft;

b) the angular displacement of said shaft being responsive to fluid flows transmitted through a pair of lines coupled thereto;

c) means for coupling said camera head to said at least one positioner so that the attitude of said camera head is responsive to the angular displacement of said output shaft;

d) a valve associated with said positioner, said valve being coupled to said pair of lines for controlling said fluid flows;

e) a hydraulic unit for providing fluid under predetermined pressure to said valve; and

f) means for selectively energizing said valve to determine said fluid flows.

Serial No. 09/339,430 . . . . . Page 3

2. (CURRENTLY AMENDED) Apparatus as defined in Claim 17 & wherein each of said positioners ~~at least one positioner~~ further includes:

- a) a rotational actuator having an actuator shaft;
- b) the angular rotation displacement of said actuator shaft being directly responsive to said fluid flows;
- c) a generally-cylindrical inner housing, said inner housing having an internal cavity for accommodating said rotational actuator;
- d) the axis of symmetry of said generally-cylindrical inner housing being coincident with that of said actuator shaft;
- e) said inner housing including a cylindrical main shaft position of reduced diameter at one end thereof;
- f) means for fixing said actuator shaft to said inner housing whereby rotation of said inner housing generates corresponding rotation of said main shaft.

Serial No. 09/339,430 . . . . . Page 4

3. (CURRENTLY AMENDED) Apparatus as defined in Claim 2 wherein each of said positioners ~~at least one positioner~~ further includes:

- a) ~~said a generally-cylindrical~~ outer housing being generally cylindrical;
- b) said generally-cylindrical outer housing having a hollow interior for accommodating said inner housing; and
- c) means for rotatably coupling said inner housing to said outer housing.

4. (ORIGINAL) Apparatus as defined in Claim 2 wherein said rotational actuator further includes:

- a) a substantially-hollow cylindrical body with an axially-elongated pedestal protruding inwardly and contacting said actuator shaft;
- b) an axially-elongated radially-directed fin fixed to said actuator shaft and extending to the inner surface of said substantially-hollow cylindrical body whereby the interior of said cylindrical body comprises two chambers;
- c) a wall at one end of said rotational actuator having two apertures, each of said apertures being in communication with one of said chambers; and
- d) one of said lines being in communication with one of said apertures and the other line being in communication with the other of said apertures.

Serial No. 09/339,430 . . . . . Page 5

5. (ORIGINAL) Apparatus as defined in Claim 2 wherein said cylindrical main shaft portion is exteriorly-threaded.

6. (ORIGINAL) Apparatus as defined in Claim 3 further including a contacting annular seal between the interior of said outer housing and the exterior of said inner housing.

7. (ORIGINAL) Apparatus as defined in Claim 6 wherein said seal further includes:

- a) a pair of outwardly-directed wipers; and
- b) said wipers are axially aligned adjacent said outer surface of said inner housing.

8. (ORIGINAL) Apparatus as defined in Claim 3 further including a pair of contacting, axially-aligned annular bearing races between the interior of said outer housing and the exterior of said inner housing.

9. (ORIGINAL) Apparatus as defined in Claim 8 wherein each of said bearing races houses a tapered bearing.

Serial No. 09/339,430 . . . . . Page 6

10. (ORIGINAL) Apparatus as defined in Claim 2 wherein said means for fixing said actuator shaft to said inner housing further comprises:

a) a tapered collet, said collet surrounding and being coaxial with said actuator shaft;

b) means for fixing said collet to said inner housing; and

c) means for fixing said tapered collet to said actuator shaft.

11. (ORIGINAL) Apparatus as defined in Claim 10 wherein said means for fixing said tapered collet to said actuator shaft comprises an inwardly-directed key extending from the interior of said collet to a groove within the exterior of said actuator shaft.

12. (ORIGINAL) Apparatus as defined in Claim 2 further including:

a) the interior of said main shaft position being substantially hollow;

b) a substantially-cylindrical plug, said plug being received within said hollow interior of said main shaft; and

c) means for sealing said plug to said main shaft.

Serial No. 09/339,430 . . . . . Page 7

13. (ORIGINAL) Apparatus as defined in Claim 12

wherein said means for sealing comprises:

- a) an o-ring; and
- b) said o-ring being received within an annular groove within the outer surface of said plug.

14. (ORIGINAL) Apparatus as defined in Claim 5 further including:

- a) a mounting structure;
- b) said mounting structure including a substantially-planar plate having an internal aperture for accommodating said cylindrical main shaft; and
- c) an interiorly-threaded nut for securing said plate to said main shaft whereby said mounting structure is rotatable with said main shaft.

15. (CANCELED) Apparatus as defined in Claim 14 further including:

- a) two positioners;
- b) an inclined bracket, the ends of said bracket being fixed to the outer housings of said positioners; and
- c) the mounting structure of one of said positioners being fixed to said camera head and the mounting structure of the other positioner being fixed to a camera support structure.

Serial No. 09/339,430 . . . . . Page 8

16. (CANCELED) Apparatus for remotely controlling the position of a camera head, said apparatus comprising, in combination:

- a) at least one positioner having an output shaft;
- b) the angular displacement of said shaft being responsive to pressure transmitted through a pair of lines coupled thereto;
- c) means for coupling said camera head to said at least one positioner so that the attitude of said camera head is responsive to the angular displacement of said output shaft;
- d) a valve associated with said positioner, said valve being coupled to said pair of lines for controlling said pressure;
- e) a unit for providing said pressure to said valve; and
- f) means for selectively energizing said valve to determine said pressure.

Serial No. 09/339,430 . . . . . Page 9

17. (NEW) Apparatus for remotely tilting and panning a camera head fixed to a boom, said apparatus comprising, in combination:

a) a first and a second pressure-actuated positioner, each of said positioners including an elongated, output shaft rotatable with respect to an outer housing;

b) said positioners being vertically and orthogonally disposed with respect to one another so that said output shafts define orthogonal tilt and pan axes;

c) means for coupling said camera head to one of said positioners so that the tilt of said camera head is responsive to the angular rotation of the output shaft of said positioner; and

d) means for coupling said output shaft of said other positioner to said boom so that a pan angle of said camera head is responsive to rotation of said outer housing of said other positioner.



Serial No. 09/339,430 . . . . . Page 10

18. (NEW) Apparatus as defined in Claim 17 further including:

- a) an inclined elongated bracket; and
- b) the outer housings of said positioners being fixed to opposed ends of said bracket.

19. (NEW) Apparatus as defined in Claim 18 wherein each of said positioners additionally comprises:

- a) the angular rotation of each of said output shafts being responsive to fluid flows transmitted through a pair of lines coupled thereto;
- b) a valve associated with each of said positioners, each of said valves being coupled to pair of lines for controlling said fluid flows;
- c) a hydraulic unit for providing fluid under predetermined pressure to each of said valves; and
- d) means for selectively energizing each of said valves to determine said fluid flows.